

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA18 | Stoneleigh, Kenilworth and Burton Green

Operational assessment (SV-004-018)

Sound, noise and vibration

November 2013

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Department
for Transport

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Appendix SV-004-018

Environmental topic:	Sound, noise and vibration	SV
Appendix name:	Operation assessment	004
Community forum area:	Stoneleigh, Kenilworth and Burton Green	018

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1 Introduction

1.1 Structure of the sound, noise and vibration appendices

- 1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these is an introduction to the relevant policy and methodology (Appendix SV-001-000). This relates to the sound, noise and vibration assessment for all community forum areas (CFA).
- 1.1.2 For the Stoneleigh, Kenilworth and Burton Green community forum area (CFA18), the other three sections are as follows:
- baseline sound, noise and vibration (Appendix SV-002-018);
 - construction sound, noise and vibration (Appendix SV-003-018); and
 - operational sound, noise and vibration (Appendix SV-004-018) (this appendix).
- 1.1.3 The outcomes of this assessment are summarised in Volume 2: CFA18 Report, Chapter 11 Sound, Noise and Vibration.
- 1.1.4 Maps referred to throughout the sound, noise and vibration appendices are contained in the Volume 5 sound, noise and vibration map book.
- 1.1.5 This appendix presents the likely noise and vibration impacts, effects and significant effects arising from the operation of the Proposed Scheme for the Stoneleigh, Kenilworth and Burton Green area on:
- people, primarily where they live ('residential receptors') in terms a) individual dwellings and b) on a wider community basis, including any shared community spaces; and
 - community facilities such as schools, hospitals, places of worship, and also commercial properties such as offices and hotels, collectively described as 'non-residential receptors' and 'quiet areas'.
- 1.1.6 The assessment of likely impacts, effects and significant effects from operational noise and vibration on agricultural, community, ecological or heritage receptors and the assessment of tranquillity are presented in the following documents within Volume 5:
- Agriculture, forestry and soils Appendix AG-001-018
 - Community Appendix CM-001-018
 - Ecology Appendix EC-005-003
 - Heritage Appendix CH-003-018
 - Landscape and Visual Appendix LV-001-018

1.2 Evaluation of impacts and effects

- 1.2.1 This appendix provides a quantitative assessment of operational noise and vibration impacts and effects and a qualitative assessment of likely significant effects, based on the impacts and effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.

- 1.2.2 Indirect effects arising from permanent changes in traffic patterns on the existing road and rail networks as a consequence of the Proposed Scheme are also reported in this appendix, where they would occur within the study area as defined in Volume 5 Appendix SV-001-000.
- 1.2.3 Route-wide impacts, effects and significant effects associated with noise or vibration from the operation of the Proposed Scheme are reported in Volume 3.
- 1.2.4 Off-route effects of noise or vibration arising from the operation of the Proposed Scheme, including those likely to arise from permanent changes in traffic patterns on roads or railways outside of the study area for direct effects are reported in Volume 4.
- 1.2.5 In undertaking the assessment of sound and vibration, consistent with EIA Regulations and emerging National Planning Practice Guidance¹ a differentiation between impacts effects, adverse effects and significant effects is made. Further information is provided in Appendix SV001-000.
- 1.2.6 The assessment of impacts has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. The Assessment Locations employed in this assessment are presented on map series Sv-02 in the CFA18 Volume 5 sound, noise and vibration map book.

¹ National Planning Practice Guidance – Noise <http://planningguidance.planningportal.gov.uk> ; refer to the table summarising noise exposure hierarchy

2 Scope, assumptions and limitations

2.1 Regional and local policy guidance

2.1.1 The policy framework for sound, noise and vibration is set out in Volume 1 and in Appendix SV-001-000. As part of the engagement with local authorities through the Planning Forum Sub Group - Acoustics, information regarding any specific local planning guidance in respect of noise and vibration has been requested. Whilst no information has been received for this study area via the Planning Forum Sub Group - Acoustics, the following local policy guidance on noise and vibration has been identified:

- Warwick District Council - Local Plan - 1996 to 2011
- The City of Coventry - Unitary Development Plan - 1996-2011
- The Solihull Unitary Development Plan - February 2006

2.1.2 This guidance has been considered as part of formulating the detailed application of the impact and significance criteria set out in Volume 5, particularly Appendix SV-001-000.

2.2 Engagement

2.2.1 Details of engagement on a route-wide basis with the local and county authorities' Environmental Health Practitioners via the Planning Forum Sub Group - Acoustics, is set out in Volume 1.

2.2.2 Engagement with communities has been via the Community Forums, as set out in Volume 1. In respect of sound, noise and vibration the following discussions have taken place:

- general discussions in respect of local issues, including possible ways to avoid and mitigate the potential impacts of noise or vibration
- September / October 2012; a specific presentation about sound, noise and vibration with discussion afterwards with one of the project team specialists;
- November / December 2012; specific request for the Community Forum to propose baseline sound monitoring locations;
- January / February 2013; feedback to the Community Forum on any proposed baseline monitoring locations; and
- verbal / written response to questions on sound, noise and vibration.

2.3 Methodology

2.3.1 The methodology used for the assessment of airborne sound, ground-borne sound and vibration impacts and the determination of significant effects is defined in the Scope and Methodology Report (SMR) (Volume 5: Appendix CT-001-000/1), is clarified in a number of areas by the SMR addendum (Volume 5: Appendix CT-001-000/2). Further information is contained in Volume 5: Appendix SV-001-000.

2.4 Assumptions

- 2.4.1 Route-wide assumptions are outlined in Volume 1 and are further detailed in Appendix SV-001-000. Local assumptions that apply to the assessment of operational sound noise and vibration within this CFA are set out in Volume 2: Report 18.

2.5 Local limitations

- 2.5.1 In this area, there are a number of locations where the land or property owners did not permit baseline sound level monitoring to be undertaken at their premises. However, sufficient information has been obtained to undertake the assessment. Further information is provided in Volume 5: Appendix SV-002-018.

3 Environmental baseline

3.1 Existing baseline

- 3.1.1 Baseline sound level data has been collected at locations representative of the airborne sound-sensitive receptors. The existing and future baseline airborne sound levels derived from these measurements are included within Table 3. Details of the baseline data collection and the methodology are given in Appendix SV-001-000 and specifically for this study area in Appendix SV-002-018.
- 3.1.2 The majority of receptors adjacent to the line of the route are not currently subject to appreciable vibration and therefore vibration at all receptors has been assessed using the absolute vibration criteria as described in Appendix SV-001-000.

3.2 Future baseline

- 3.2.1 The assessment is based upon the predicted change in sound levels that result from the Proposed Scheme. The assessment initially considered a reasonable worst case (that would overestimate the change in levels) by assuming that sound levels would not change from the existing baseline year of 2012/2013. Where significant effects were identified on this basis, the effects have been assessed using the baseline year of 2026 to coincide with the proposed start of passenger services. The future baseline is for the sound environment that would exist in 2026 without the Proposed Scheme.

4 Effects arising during operation

4.1 Introduction

4.1.1 The assessment is reported first for ground-borne sound and vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts and effects are presented. This is followed by the identification of significant effects and the evidence used to support these conclusions.

4.1.2 The structure of this assessment report is:

- Avoidance and mitigation measures
- Quantitative identification of impact and effects
 - Ground-borne sound and vibration
 - Residential
 - Non-residential
 - Airborne sound
 - Residential
 - Non-residential
- Assessment of impacts and effects
 - Residential receptors: direct effects – dwellings
 - Residential receptors: direct effects – communities
 - Residential receptors: indirect effects
 - Non-residential receptors: direct effects
 - Non-residential receptors: indirect effects
 - Cumulative effects from the proposed scheme and other committed development.

4.2 Avoidance and mitigation measures

4.2.1 These are set out in Volume 2: Report 18.

4.3 Quantitative identification of impacts and effects

Ground-borne sound and vibration

4.3.1 Assessment locations defined for the quantitative assessment of impacts are shown on map series SV-02 in the CFA18 Volume 5 sound, noise and vibration map book.

4.3.2 For each Assessment Location, the assessment results for residential and non-residential receptors are presented in Table 1. Explanation of the information in Table 1 is provided in Appendix SV-001-000, with the following additional notes.






B	Type of effect - For significant effects further detail about the type of effect is set out in the text of Appendix SV-001-000.
NA	Type of effect - Generally no adverse effect
A	Type of effect - Adverse effect
S	Type of effect - Significant adverse effect
VDV	Vibration Dose Value
~	Effectuated dwellings which are either spatially remote from larger defined residential areas or a small number of dwellings whose impact is not considered to represent the larger defined residential area and as such are not considered to be part of a community significant effect.
^	Significant effect - The impact methodology has identified a potential significant effect at this receptor which based upon further qualitative information is not considered to be a likely significant effect.
	Where the significant effect column is highlighted in pink, then a significant effect is identified at the referenced community, or individual receptor.
	Yellow denotes a low ground-borne noise impact or a minor ground-borne vibration impact
	Orange denotes a medium ground-borne noise impact or a moderate ground-borne vibration impact
	Red denotes a high ground-borne noise impact or a major ground-borne vibration impact
	Dark red denotes a very high ground-borne noise impact

Table 1: Ground-borne sound and vibration levels, noise and vibration impacts and effects

Assessment location		Impact criteria				Significance criteria								Significant effect
		Ground-borne sound level dB L_{pASmax}	VDV $m/s^{1.75}$ Daytime (07:00 - 23:00)	VDV $m/s^{1.75}$ Night time (23:00 - 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
ID	Area represented													
202851	Waste Lane, Balsall Common	-	0.15	0.08	-	1	NA	R	T	-	-	-	-	
204079	Hodgetts Lane, Burton Green	37	0.27	0.14	-	5	S	R	T	-	-	-	-	^
204103	Cromwell Lane, Burton Green	37	0.27	0.13	-	2	S	R	T	-	-	-	-	^
204138	Cromwell Lane, Burton Green	26	0.09	0.04	-	9	NA	R	T	-	-	-	-	
204193	Cromwell Lane, Burton Green	32	0.17	0.08	-	4	NA	R	T	-	-	-	-	
204223	Cromwell Lane, Burton Green	30	0.15	0.07	-	4	NA	R	T	-	-	-	-	
204998	Hodgetts Lane, Burton Green	33	0.19	0.09	-	5	NA	R	T	-	-	-	-	
205188	Hodgetts Lane, Burton Green	25	0.08	0.04	-	8	NA	R	T	-	-	-	-	
226073	Dalehouse Lane, Kenilworth	-	0.08	0.04	-	2	NA	R	T	-	-	-	-	
202851	Waste Lane, Balsall Common	-	0.18	0.09	-	1	A	R	T	-	-	-	-	
219394	National Agricultural Centre, Stoneleigh Park, (Ambulance Station)	-	0.06	0.03	-	1	B	G4/V3	T	-	-	-	-	
226073	The Dalehouse, Dalehouse Lane, Kenilworth, (General Commercial)	-	0.08	0.04	-	2	B	G4/V3	T	-	-	-	-	

Impact summary





- 4.3.3 The operational ground-borne noise and vibration impacts identified in Table 1 are summarised in Table 2.

Table 2: Summary of operational ground-borne noise and vibration impacts

	Number of ground-borne noise impacts			
	Low	Medium	High	Very High
Residential properties	7	0	0	0
Non-residential properties	0			0
	Number of ground-borne vibration impacts			
	Minor	Moderate	Major	Risk of building damage
Residential properties	7	0	0	0

Airborne sound: direct impacts and effects

- 4.3.4 The direct effects from the operation of the Proposed Scheme as well as any new, amended or altered roads or railway lines, which are identified as part of the scheme, are presented in Table 3.
- 4.3.5 The assessment information, impact criteria and significance criteria for the assessment of the incorporated mitigation case at residential and non-residential receptors are presented in Table 3. The results should be considered in conjunction with the information contained in map series Sv-02 in the CFA18 Volume 5 sound, noise and vibration map book.
- 4.3.6 Explanation of the Table 3 information is provided in Appendix SV001-000, with the following additional notes.

	Where the significant effect column is marked, then a significant effect is identified at the referenced group of dwellings, or individual residential or non-residential receptor.
	Yellow denotes a minor impact at a residential building – a change is of 3-5 dB
	Orange denotes a moderate impact at a residential building – a change is of 5-10 dB
	Red denotes a major impact at a residential building – a change is of >10 dB
*	Day - $L_{pAeq,07:00-23:00}$
**	Night - $L_{pAeq,23:00-07:00}$
***	Max - $L_{pA_{fmax}}$ In the Proposed Scheme only column, two values are presented. The first is the value for the HS2 mitigated train and the second is the value for the TSI compliant train. For further information refer to Appendix SV-001-000.
****	Where the Proposed Scheme amends the existing source, i.e. road or railway realignments, the <i>Proposed Scheme only</i> level in the table includes the sound from the amended source, in this situation the <i>Do something (Opening year baseline + Year 15 traffic)</i> level has been corrected so as to not double count the sound associated with the road or railway on its new and existing alignment.
A	Adverse effect
B	For significant effects further detail about the type of effect is set out in the text of Appendix SV-001-000.
CD	Committed Development. The value in brackets in the number of impacts represented column is the value with the committed development.

G	(G1) Theatres, large auditoria and concert halls, (G2) Sound recording and broadcast studios, (G3) Places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (G4) Schools, colleges, hospitals, hotels and libraries, and (G5) Offices and general commercial premises
H	High existing ambient sound level. Defined as $>65\text{dB}_{\text{L}_{\text{Aeq, day}}}$ and/or $>55\text{dB}_{\text{L}_{\text{Aeq, night}}}$
L	Low existing ambient sound level. Defined as $<42\text{dB}_{\text{L}_{\text{Aeq, day}}}$ and/or $<32\text{dB}_{\text{L}_{\text{Aeq, night}}}$
LD	Landscape receptor
NA	Generally no adverse effect
NI	The receptor is predicted to qualify for mitigation, which shall be provided to the specification defined in the Noise Insulation (Railways and other Guided Rail Systems) Regulations 1996
R	Residential
RM	Residential mooring
S	Significant adverse effect
U	Unacceptable adverse effect
#	A change of 3dB or greater has been identified however, the assessment methodology only defines an impact where the absolute sound level from the Proposed Scheme is greater or equal to 50 dB $L_{\text{pAeq, 23:00} - 07:00}$ during the daytime or 40 dB $L_{\text{pAeq, 07:00} - 23:00}$ at night. At the receptor denoted the absolute level condition is not met and therefore no impact is identified.
~	Impacted dwellings which are either spatially remote from larger defined residential areas or a small number of dwellings whose impact is not considered to represent the larger defined residential area, and as such are not considered to be part of a community significant effect.
\$	A change of 3dB or greater has been identified however, the impact methodology for non-residential receptors includes a screening criteria for G3 building use of 50 dB $L_{\text{pAeq, 07:00-23:00}}$, for G4 building use 55 dB $L_{\text{pAeq, 07:00-23:00}}$ and 45 dB $L_{\text{pAeq, 23:00-07:00}}$, for G5 building use 55 dB $L_{\text{pAeq, 07:00-23:00}}$. At the receptor denoted the screening criteria is not met and therefore no impact is identified.
^	The impact methodology has either identified an impact at a receptor which based upon further qualitative information does not give rise to a significant effect.

Table 3: Operational airborne sound level, noise impacts and effects

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
192269	Fennyland Lane, Kenilworth	43	35	51/54	46	37	41	47	38	1	1	NA	49	R	T	-	-	-	-	
192312	Arborfields Close, Kenilworth	49	39	59/62	47	35	49	51	41	4	6	A	6	R	T	-	-	-	-	#
192456	Laneham Place, Kenilworth	46	37	57/60	62	50	67	62	50	0	0	NA	33	R	T	-	-	-	-	
192623	Red Lane, Burton Green	50	41	65/68	54	52	69	55	52	2	0	A	8	R	T	-	-	-	-	
192740	Red Lane, Burton Green	44	35	57/60	61	59	73	61	59	0	0	NA	34	R	T	H	-	-	-	
192801	Red Lane, Burton Green	47	38	60/63	61	59	73	61	59	0	0	NA	26	R	T	H	-	-	-	
192994	Red Lane, Burton Green	48	38	62/65	61	59	73	61	59	0	0	NA	25	R	T	H	-	-	-	
193519	Crackley Lane, Kenilworth	64	55	81/84	45	42	52	65	55	19	13	S	2	R	T	-	-	-	NI	OSV18-Do3
193528	Crackley Lane, Kenilworth	56	46	69/72	50	47	57	57	50	6	3	A	1	R	T	-	-	-	-	~
193583	Hollis Lane, Kenilworth	44	35	61/63	48	45	55	50	46	1	0	NA	5	R	T	-	-	-	-	
193618	Hollis Lane, Kenilworth	55	46	70/72	40	37	47	55	46	15	9	A	3	R	T	L	-	-	-	~
196840	Coventry Road, Kenilworth	57	49	64/67	62	50	67	63	51	0	1	A	8	R	T	-	-	-	-	
196895	Crackley Crescent, Kenilworth	49	40	62/65	60	52	64	60	53	0	0	A	9	R	T	-	-	-	-	
196951	Coventry Road, Kenilworth	49	40	59/62	56	44	58	57	45	1	1	A	4	R	T	-	-	-	-	
197068	Coventry Road, Kenilworth	43	34	56/58	52	44	65	53	44	1	0	NA	14	R	T	-	-	-	-	
197103	Coventry Road, Kenilworth	46	38	56/59	56	44	58	56	45	0	1	NA	13	R	T	-	-	-	-	
197201	Crackley Lane, Stoneleigh	42	33	56/59	41	35	42	45	37	3	2	NA	1	R	T	L	-	-	-	#
197360	Coventry Road, Kenilworth	42	33	55/58	52	44	65	52	44	0	0	NA	22	R	T	-	-	-	-	
197431	Coventry Road, Kenilworth	43	35	53/56	52	44	65	53	44	0	0	NA	18	R	T	-	-	-	-	
197505	Woodland Road, Kenilworth	45	37	55/58	55	45	62	55	45	0	0	NA	11	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
197545	Woodland Road, Kenilworth	47	40	55/58	55	45	62	55	46	1	1	A	12	R	T	-	-	-	-	
197585	Woodland Road, Kenilworth	46	39	55/58	47	37	55	48	39	2	2	NA	14	R	T	-	-	-	-	
197625	Woodland Road, Kenilworth	43	35	54/57	59	54	62	59	54	0	0	NA	20	R	T	-	-	-	-	
197735	Woodland Road, Kenilworth	43	35	54/57	52	42	56	52	43	0	1	NA	22	R	T	-	-	-	-	
197879	Common Lane, Kenilworth	43	35	53/56	51	46	59	52	46	0	0	NA	30	R	T	-	-	-	-	
198097	Moss Grove, Kenilworth	42	35	52/54	59	54	62	59	54	0	0	NA	20	R	T	-	-	-	-	
198215	Crackley Lane, Kenilworth	41	32	56/59	41	35	42	44	37	3	2	NA	2	R	T	L	-	-	-	#
198730	Cryfield Grange Road, Kenilworth	52	43	65/68	43	36	46	52	43	9	8	A	1	R	T	-	-	-	-	~
198773	Cryfield Grange Road, Kenilworth	48	39	63/66	43	36	46	49	40	6	5	NA	2	R	T	-	-	-	-	#
199042	Redthorne Grove, Kenilworth	49	39	58/60	47	35	49	51	41	4	6	A	5	R	T	-	-	-	-	#
200460	Westwood Heath Road, Coventry	40	31	57/60	48	34	44	48	36	1	2	NA	5	R	T	-	-	-	-	
202456	Hob Lane, Balsall Common	45	36	62/65	46	41	49	48	42	2	1	NA	4	R	T	-	-	-	-	
202746	Waste Lane, Balsall Common	57	47	75/77	53	40	62	57	47	5	7	A	5	R	T	-	-	-	-	OSV18-Co3
202851	Waste Lane, Balsall Common	62	52	79/82	53	40	62	62	52	9	12	S	1	R	T	-	-	-	NI	OSV18-Co3 OSV18-Do4
202900	Waste Lane, Balsall Common	59	50	74/77	48	35	50	59	50	11	14	A	1	R	T	-	-	-	-	OSV18-Co3
202921	Waste Lane, Balsall Common	58	48	71/74	53	40	62	58	48	5	8	A	4	R	T	-	-	-	-	OSV18-Co3
203166	Waste Lane, Balsall Common	58	48	77/79	53	40	62	58	48	6	9	A	2	R	T	-	-	-	-	OSV18-Co3
204079	Hodgetts Lane, Burton Green	42	33	63/66	50	48	50	51	48	1	0	NA	5	R	T	-	-	-	-	
204103	Cromwell Lane, Burton Green	40	31	65/68	47	40	51	48	41	1	0	NA	2	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
204138	Cromwell Lane, Burton Green	44	34	65/68	47	40	51	48	41	2	1	NA	9	R	T	-	-	-	-	
204193	Cromwell Lane, Burton Green	43	33	64/67	47	40	51	48	41	1	1	NA	4	R	T	-	-	-	-	
204223	Cromwell Lane, Burton Green	44	35	66/69	47	40	51	49	41	2	1	NA	4	R	T	-	-	-	-	
204255	Cromwell Lane, Burton Green	48	39	70/73	47	41	51	51	43	3	2	NA	6	R	T	-	-	-	-	#
204406	Hob Lane, Burton Green	41	31	57/60	53	44	54	53	44	0	0	NA	7	R	T	-	-	-	-	
204480	Hob Lane, Burton Green	46	37	64/67	51	49	51	52	50	1	0	NA	2	R	T	-	-	-	-	
204571	Hob Lane, Burton Green	37	28	55/58	44	37	41	44	37	1	1	NA	6	R	T	-	-	-	-	
204647	Red Lane, Burton Green	51	41	70/73	47	41	51	52	44	5	3	A	10	R	T	-	-	-	-	OSV18-Co2
204672	Cromwell Lane, Burton Green	44	35	66/69	47	40	51	49	41	2	1	NA	10	R	T	-	-	-	-	
204704	Hob Lane, Burton Green	40	31	59/62	70	48	64	70	48	0	0	NA	4	R	T	H	-	-	-	
204827	Waste Lane, Balsall Common	51	42	65/68	47	34	50	52	42	5	8	A	8	R	T	-	-	-	-	OSV18-Co3
204847	Waste Lane, Balsall Common	55	45	68/71	47	34	50	55	45	8	10	A	1	R	T	-	-	-	-	OSV18-Co3
204916	Hodgetts Lane, Burton Green	49	40	57/62	47	45	50	51	46	4	1	A	4	R	T	-	-	-	-	#
204998	Hodgetts Lane, Burton Green	46	37	61/64	49	47	50	51	47	2	0	NA	5	R	T	-	-	-	-	
205051	Hodgetts Lane, Burton Green	47	37	63/66	49	47	50	51	47	2	0	NA	6	R	T	-	-	-	-	
205107	Cromwell Lane, Burton Green	43	34	60/63	47	40	51	48	41	2	1	NA	7	R	T	-	-	-	-	
205176	Cromwell Lane, Burton Green	43	33	63/66	47	40	51	48	41	1	1	NA	10	R	T	-	-	-	-	
205188	Hodgetts Lane, Burton Green	44	35	61/64	49	47	50	51	47	1	0	NA	8	R	T	-	-	-	-	
205246	Cromwell Lane, Burton Green	44	35	62/65	50	43	51	51	44	1	1	NA	10	R	T	-	-	-	-	
205259	Hodgett's Lane, Stoneleigh	53	43	77/80	49	47	50	54	48	5	2	A	1	R	T	-	-	-	-	~
205270	Hodgetts Lane, Berkswell	48	39	62/65	47	34	50	51	40	4	6	NA	4	R	T	-	-	-	-	#

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
205274	Nailcote Lane, Berkswell	46	37	60/63	62	43	56	62	44	0	1	NA	3	R	T	-	-	-	-	
206065	Nailcote Lane, Berkswell	41	32	55/57	66	56	79	66	56	0	0	NA	1	R	T	H	-	-	-	
206156	Nailcote Lane, Berkswell	41	32	55/58	64	56	79	64	56	0	0	NA	5	R	T	H	-	-	-	
206363	Bockendon Road, Coventry	52	43	68/71	41	40	41	53	45	11	5	A	3	R	T	L	-	-	-	~
206371	Crackley Lane, Kenilworth	51	42	67/70	53	52	56	56	52	2	0	A	6	R	T	-	-	-	-	
206392	Red Lane, Burton Green	55	46	69/72	57	46	55	59	49	2	3	A	13	R	T	-	-	-	-	OSV18-Co2
206457	Red Lane, Burton Green	51	41	66/69	53	42	51	55	44	2	3	A	1	R	T	-	-	-	-	OSV18-Co2
206515	Red Lane, Burton Green	53	43	66/69	56	45	55	58	47	2	2	A	5	R	T	-	-	-	-	
206561	Red Lane, Burton Green	51	42	65/68	56	45	55	57	47	1	2	A	5	R	T	-	-	-	-	
207279	Cromwell Lane, Coventry	38	29	54/57	56	37	49	56	38	0	1	NA	14	R	T	-	-	-	-	
207331	Cromwell Lane, Burton Green	38	28	50/54	58	39	49	58	39	0	0	NA	15	R	T	-	-	-	-	
207393	Cromwell Lane, Coventry	36	27	48/53	58	39	49	58	39	0	0	NA	17	R	T	-	-	-	-	
207631	Cromwell Lane, Coventry	36	27	51/54	58	39	49	58	39	0	0	NA	8	R	T	-	-	-	-	
207990	Cromwell Lane, Burton Green	42	33	59/62	47	40	51	48	41	1	1	NA	16	R	T	-	-	-	-	
208148	Cromwell Lane, Burton Green	41	31	54/57	58	39	49	58	40	0	1	NA	19	R	T	-	-	-	-	
208215	Cromwell Lane, Burton Green	39	30	54/57	56	37	49	56	38	0	1	NA	19	R	T	-	-	-	-	
209053	Crackley Lane, Kenilworth	55	45	69/72	48	45	55	56	48	7	3	A	1	R	T	-	-	-	-	~
216902	Leicester Lane, Cubbington	61	52	77/80	65	56	72	61	52	-3	-4	A	4	R	T	H	-	-	-	
216927	Kenilworth Road, Coventry	46	38	59/62	59	55	60	59	55	0	0	NA	3	R	T	H	-	-	-	
217392	Kenilworth Road, Coventry	54	46	66/69	64	60	60	64	60	0	0	A	4	R	T	H	-	-	-	
217535	Fairway Rise, Kenilworth	45	38	59/61	47	38	50	48	39	1	1	NA	53	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
217784	Grovehurst Park, Kenilworth	52	44	53/56	55	45	60	54	44	-1	-1	A	12	R	T	-	-	-	-	
217994	East Gate, Stoneleigh Park	53	45	64/68	50	40	58	54	45	4	5	A	3	R	T	-	-	-	-	OSV18-Co1
218483	Stoneleigh Abbey, Stoneleigh Park	48	40	55/58	49	44	50	50	45	2	1	A	2	R	T	-	-	-	-	
218718	National Agricultural Centre, Stoneleigh Park	47	38	57/60	47	42	52	50	43	3	1	NA	2	R	T	-	-	-	-	#
219703	Vicarage Road, Stoneleigh	49	41	61/64	48	39	50	50	41	2	2	A	12	R	T	-	-	-	-	
219791	Walkers Orchard, Stoneleigh	48	40	59/62	48	39	50	49	40	1	1	A	11	R	T	-	-	-	-	
219942	Birmingham Road, Stoneleigh	46	39	57/60	55	46	60	55	47	0	0	NA	32	R	T	-	-	-	-	
220383	Leicester Lane, Stoneleigh	53	45	63/66	45	41	50	53	45	8	4	A	3	R	T	-	-	-	-	~
220450	Leicester Lane, Cubbington	59	51	72/75	65	56	72	63	54	-2	-2	A	1	R	T	H	-	-	-	
220565	Stareton, Kenilworth	46	38	54/57	48	37	40	49	38	1	1	NA	3	R	T	-	-	-	-	
220606	Stareton, Kenilworth	51	43	60/63	52	41	48	54	43	1	2	A	8	R	T	-	-	-	-	
220714	Abbey Park, Stareton	46	36	52/55	47	36	43	47	36	0	0	NA	4	R	T	-	-	-	-	
221156	Church Lane, Stoneleigh	45	37	57/60	47	46	48	48	46	1	0	NA	13	R	T	-	-	-	-	
221368	Coventry Road, Cubbington	52	43	62/65	48	35	46	53	43	5	8	A	1	R	T	-	-	-	-	~
222373	Crew Lane, Kenilworth	48	41	55/57	50	43	53	51	44	1	0	A	1	R	T	-	-	-	-	
222393	Dalehouse Lane, Stoneleigh	48	40	70/73	52	43	55	53	44	1	1	A	6	R	T	-	-	-	-	
222401	Common Lane, Kenilworth	41	33	56/59	49	44	50	50	44	0	0	NA	56	R	T	-	-	-	-	
223457	Frythe Close, Kenilworth	46	37	62/64	42	33	48	46	37	4	4	NA	10	R	T	L	-	-	-	#
223467	Cotton Drive, Kenilworth	42	34	54/57	49	44	50	50	44	0	0	NA	48	R	T	-	-	-	-	
223712	Lulworth Park, Kenilworth	41	33	55/58	59	54	57	59	54	0	0	NA	46	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
223946	Lulworth Park, Kenilworth	45	37	64/66	59	54	57	59	54	0	0	NA	18	R	T	-	-	-	-	
225929	Coventry Road, Kenilworth	54	45	65/68	51	42	46	55	45	3	4	A	1	R	T	-	-	-	-	~
225955	Coventry Road, Kenilworth	53	44	65/67	51	42	46	55	45	4	4	A	1	R	T	-	-	-	-	~
226073	Dalehouse Lane, Kenilworth	59	50	82/85	45	36	48	59	50	14	14	S	1	R	T	-	-	-	NI	OSV18-Do2
226171	Inchbrook Road, Kenilworth	49	41	62/65	48	44	55	51	45	3	1	A	7	R	T	-	-	-	-	#
226203	Highland Road, Kenilworth	47	39	60/62	46	35	46	49	39	3	4	NA	10	R	T	-	-	-	-	#
226248	Highland Road, Kenilworth	48	40	58/61	51	42	46	52	43	1	1	A	7	R	T	-	-	-	-	
226301	Highland Road, Kenilworth	45	37	58/60	51	42	46	52	42	1	1	NA	10	R	T	-	-	-	-	
226442	Highland Road, Kenilworth	46	38	60/63	46	35	46	49	38	3	4	NA	17	R	T	-	-	-	-	#
226501	Highland Road, Kenilworth	48	40	61/64	48	44	55	50	44	2	1	A	20	R	T	-	-	-	-	
226630	Inchbrook Road, Kenilworth	48	40	63/66	48	44	55	50	45	2	1	A	10	R	T	-	-	-	-	
226786	Inchbrook Road, Kenilworth	46	38	59/62	46	35	46	48	38	2	3	NA	25	R	T	-	-	-	-	#
226941	Highland Road, Kenilworth	44	37	56/59	46	35	46	47	37	1	2	NA	18	R	T	-	-	-	-	
227153	Butler Close, Kenilworth	44	36	59/62	55	40	51	55	40	0	1	NA	13	R	T	-	-	-	-	
227215	Whitehead Drive, Kenilworth	48	38	69/72	50	35	47	51	38	1	4	NA	9	R	T	-	-	-	-	#
227238	Best Avenue, Kenilworth	47	38	68/70	50	35	47	51	38	1	4	NA	12	R	T	-	-	-	-	#
227277	Garlick Drive, Kenilworth	44	36	58/60	49	44	50	50	44	1	0	NA	35	R	T	-	-	-	-	
227360	Stoneleigh Road, Coventry	43	35	54/56	56	52	54	56	52	0	0	NA	10	R	T	-	-	-	-	
227387	Beverly Drive, Coventry	41	33	53/56	58	54	54	58	54	0	0	NA	5	R	T	-	-	-	-	
227431	Beverly Drive, Coventry	44	37	57/60	58	54	54	58	54	0	0	NA	2	R	T	-	-	-	-	
227513	Kenilworth Road, Coventry	43	34	56/59	64	60	60	64	60	0	0	NA	4	R	T	H	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
227545	Beverly Drive, Coventry	43	35	57/59	63	59	59	63	59	0	0	NA	2	R	T	H	-	-	-	
228223	Cryfield Grange Road, Coventry	44	36	57/59	45	36	46	47	37	2	2	NA	8	R	T	-	-	-	-	
228321	Cryfield Grange Road, Coventry	48	39	60/63	47	40	47	49	41	2	1	NA	6	R	T	-	-	-	-	
228690	Beverly Drive, Coventry	44	37	56/59	55	51	51	55	51	0	0	NA	4	R	T	-	-	-	-	
228744	Kenilworth Road, Coventry	47	39	61/64	64	60	60	64	60	0	0	NA	4	R	T	H	-	-	-	
228816	Stoneleigh Abbey, Kenilworth	45	38	53/56	48	43	48	48	43	0	0	NA	18	R	T	-	-	-	-	
229009	Crew Lane, Kenilworth	56	48	57/59	60	53	63	60	53	0	0	A	1	R	T	-	-	-	-	
229016	Crew Lane, Kenilworth	58	51	63/66	60	53	63	61	54	1	1	A	6	R	T	-	-	-	-	
229071	Stoneleigh Road, Coventry	44	37	60/63	54	45	57	55	45	0	0	NA	1	R	T	-	-	-	-	
229088	Dalehouse Lane, Kenilworth	59	49	79/82	52	43	55	59	49	6	6	S	2	R	T	-	-	-	NI	OSV18-Do1
229176	Dalehouse Lane, Kenilworth	61	52	68/71	63	56	63	64	57	1	0	A	3	R	T	H	-	-	-	
229186	Dalehouse Lane, Kenilworth	47	40	61/64	60	51	63	61	51	0	0	A	5	R	T	-	-	-	-	
229212	Dalehouse Lane, Kenilworth	51	43	65/67	60	51	63	61	51	0	0	A	2	R	T	-	-	-	-	
229259	Dalehouse Lane, Kenilworth	50	43	60/63	60	51	63	60	51	0	0	A	1	R	T	-	-	-	-	
229478	Stoneleigh Road, Coventry	43	36	54/57	48	44	46	48	44	0	0	NA	19	R	T	-	-	-	-	
229767	Little Cryfield, Coventry	43	35	58/61	46	34	42	48	36	1	2	NA	22	R	T	-	-	-	-	
229973	Motslow Hill, Stoneleigh	44	36	56/59	48	39	50	49	40	1	1	NA	2	R	T	-	-	-	-	
230115	The Cunnery, Kenilworth	46	39	53/56	47	42	52	48	43	1	1	NA	19	R	T	-	-	-	-	
700626	Hob Lane, Burton Green	43	34	62/65	53	44	54	53	44	0	0	NA	1	R	T	-	-	-	-	
701080	Vicarage Road, Stoneleigh	43	36	50/53	47	46	48	47	46	0	0	NA	17	R	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
711043	East Gate, Stoneleigh Park	56	47	71/74	50	40	58	57	48	7	8	A	2	R	T	-	-	-	-	OSV18-Co1
192269	Crackley Hall School, Coventry Road, Kenilworth, (School)	43	35	51/54	46	37	41	47	38	1	1	B	1	G4	T	-	-	-	-	
192623	Red Lane, Burton Green, (General Commercial)	50	41	65/68	54	52	69	55	52	2	0	B	2	G5	T	-	-	-	-	
196951	Crackley Crescent, Kenilworth (General Commercial)	51	43	59/62	56	44	58	57	46	1	2	B	1	G5	T	-	-	-	-	
198215	Crackley Lane, Kenilworth (Club)	41	32	56/59	41	35	42	44	37	3	2	B	2	G5	T	-	-	-	-	\$
202851	Waste Lane, Balsall Common, (General Commercial)	62	52	79/82	53	40	62	62	52	9	12	B	1	G5	T	-	-	-	-	^
204480	Burton Green Primary School, Hob Lane (School)	46	37	64/67	51	49	51	52	50	1	0	B	1	G5	T	-	-	-	-	
206065	Nailcote Lane, Berkswell, (General Commercial)	41	32	55/57	66	56	79	66	56	0	0	B	1	G5	T	H	-	-	-	
206156	Nailcote Hall Hotel, Nailcote Lane, Berkswell (Hotel)	41	32	55/58	64	56	79	64	56	0	0	B	1	G4	T	-	-	-	-	
207393	Cromwell Lane, Coventry, (General Commercial)	36	27	48/53	58	39	49	58	39	0	0	B	1	G5	T	-	-	-	-	
218196	National Agricultural Centre, (General Commercial)	50	40	61/65	42	31	38	50	40	7	9	B	10	G5	T	-	-	-	-	\$
218483	Stoneleigh Abbey, Kenilworth, (Office)	48	40	55/58	49	44	50	50	45	2	1	B	3	G5	T	-	-	-	-	
218718	National Agricultural Centre, Stoneleigh Park (Office)	47	38	57/60	47	42	52	50	43	3	1	B	11	G5	T	-	-	-	-	\$

Assessment Location		Impact criteria										Significance criteria								Significant effect
ID	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation of effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
218718	Stoneleigh Park Lodge Hotel, Stoneleigh Park (Hotel)	47	38	57/60	47	42	52	50	43	3	1	B	1	G5	T	-	-	-	-	\$
218885	National Agricultural Centre, Stoneleigh Park (Office)	59	49	71/74	42	31	43	59	49	16	18	B	2	G5	T	-	-	-	-	OSV18-No1
219122	National Agricultural Centre, Stoneleigh Park (Office)	60	50	71/73	43	32	40	60	50	16	18	B	2	G5	T	-	-	-	-	OSV18-No1
219122	Federation House, National Agricultural Centre (General Commercial)	60	50	71/73	43	32	40	60	50	16	18	B	1	G5	T	-	-	-	-	OSV18-No1
219394	National Agricultural Centre, Stoneleigh Park (Ambulance Station)	55	46	66/70	50	40	58	56	46	6	6	B	1	G4	T	-	-	-	-	OSV18-No1
219942	Stoneleigh Village Hall, Birmingham Road (Hall)	46	39	57/60	55	46	60	55	47	0	0	B	1	G3	T	-	-	-	-	
220714	The Management Suite, Abbey Park (General Commercial)	46	38	52/55	47	36	43	47	38	0	2	B	2	G5	T	-	-	-	-	
220714	Abbey Park, Stareton, (General Commercial)	46	38	52/55	47	36	43	47	38	0	2	B	10	G5	T	-	-	-	-	
221156	(church)	45	37	57/60	47	46	48	48	46	1	0	B	1	G3	T	-	-	-	-	
222401	Common Lane, Kenilworth, (General Commercial)	41	33	56/59	49	44	50	50	44	0	0	B	2	G5	T	-	-	-	-	
223467	Dalehouse Lane Industrial Estate (General Commercial)	42	34	54/57	49	44	50	50	44	0	0	B	5	G5	T	-	-	-	-	
223712	Clifden Grove, Kenilworth, (Office)	41	33	55/58	59	54	57	59	54	0	0	B	1	G5	T	-	-	-	-	

Assessment Location		Impact criteria										Significance criteria								Significant effect
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		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
225955	Millburn Grange, Coventry Road (General Commercial)	53	44	65/67	51	42	46	55	45	4	4	B	1	G5	T	-	-	-	-	\$
226073	The Dalehouse, Dalehouse Lane (General Commercial)	59	50	82/85	45	36	48	59	50	14	14	B	2	G5	T	-	-	-	-	^
226786	Common Lane Industrial Estate (General Commercial)	46	38	59/62	46	35	46	48	38	2	3	B	10	G5	T	-	-	-	-	\$
226941	Common Lane Industrial Estate (General Commercial)	44	37	56/59	46	35	46	47	37	1	2	B	1	G5	T	-	-	-	-	
227277	Common Lane Industrial Estate (General Commercial)	44	36	58/60	49	44	50	50	44	1	0	B	1	G5	T	-	-	-	-	
228816	Stoneleigh Chapel, Stoneleigh Abbey (Chapel)	45	38	53/56	48	43	48	48	43	0	0	B	1	G3	T	-	-	-	-	
700638	Princes Drive Industrial Estate, (General Commercial)	45	36	57/60	45	37	58	48	39	3	2	B	13	G5	T	-	-	-	-	\$
700639	Princes Drive Industrial Estate, (General Commercial)	44	35	56/58	47	39	60	48	40	1	1	B	17	G5	T	-	-	-	-	
701080	Vicarage Road, Stoneleigh (Club)	43	36	50/53	47	46	48	47	46	0	0	B	1	G5	T	-	-	-	-	

Direct impact - Summary

4.3.7 The operational airborne noise impacts identified in Table 3 are summarised in Table 4.

Table 4: Summary of operational airborne sound impacts

Receptor	Number of impacts		
	Minor	Moderate	Major
Residential properties	16	55	12
Non-residential properties	0	1	8
Quiet areas	None	None	None

4.4 Assessment of impacts and effects

Residential receptors: direct effects - individual buildings

- 4.4.1 Taking account of the avoidance and mitigation measures incorporated into the Proposed Scheme, the assessment has identified a number of residential buildings close to the Proposed Scheme where the daytime forecast noise level does not exceed the threshold set in the Regulations but the forecast night-time noise level would exceed the World Health Organization's Interim Target of 55dB², or the maximum noise level (dependent on the number of train passes) as a train passes exceeds the criterion³. It is estimated that these buildings will also be offered noise insulation as described in the Avoidance and mitigation measures section of Volume 2: Report 18. These buildings are indicated on Volume 5: Map Book - Sound, noise and vibration, Map series SV-02:
- Four Winds and The Dalehouse, Dalehouse Lane, Kenilworth, receptor reference 229088 (marked as OSV18-Do1 in Table 3);
 - The Dalehouse, Dalehouse Lane, Kenilworth, receptor reference 226073 (marked as OSV18-Do2 in Table 3);
 - South Hurst Cottage and Eskasoni, Crackley Lane, Kenilworth, receptor reference 193519 (marked as OSV18-Do3 in Table 3); and
 - Little Beanit Farm, Waste Lane, Balsall Common, receptor reference 202851 (marked as OSV18-Do4 in Table 3).
- 4.4.2 The mitigation measures including noise insulation will reduce noise inside all dwellings such that it will not reach a level where it would significantly affect residents.

² World Health Organization, Night-time Noise Guidelines for Europe, 2010

³ During the night (2300-0700) a significant effect is also identified where the Proposed Scheme results in a maximum sound level at the façade of a building at or above: 85 dB L_{pAFmax} (where the number of train pass-bys exceeding this value is less than or equal to 20); or 80 dB L_{pAFmax} (where the number of train pass-bys exceeding this value is greater than 20).

Residential receptors: direct effects –communities

- 4.4.3 The mitigation measures in this area will avoid airborne noise adverse effects on the majority of receptors, and at the following residential communities:
- Kenilworth (including Crackley);
 - Stoneleigh (except as shown in Table 5)
 - Stareton;
 - Gibbet Hill; and
 - Westwood Heath.
- 4.4.4 Taking account of the envisaged mitigation, Map Series SV-05 (Volume 2 Map book) shows the long term 40dB⁴ night-time sound level contour from the operation of trains on the Proposed Scheme. The extent of the 40dB night-time sound level contour is equivalent to, or slightly larger than, the 50dB daytime contour⁵. In general, below these levels adverse effects are not expected.
- 4.4.5 Above 40dB during the night and 50dB during the day the effect of noise is dependent on the baseline sound levels in that area and the change in sound level (magnitude of effect) brought about by the Proposed Scheme. The airborne noise impacts and effects forecast for the operation of the scheme are presented on Map Series SV-05 (Volume 2 Map Book).
- 4.4.6 Approximately 20 isolated properties within the area have been identified as being subject to an observed adverse noise effect; these effects are likely to be considered as an effect on the acoustic character of the area such that there is a perceived change in the quality of life. However, as the affected properties are spatially remote from larger defined residential areas, are subject to smaller magnitudes of noise effect, or are small in number, the effects are not considered to be significant.
- 4.4.7 The changes in noise levels are likely to affect the acoustic character of the area such that there is a perceived change in the quality of life and are considered to be significant when assessed on a community basis⁶ taking account of the local context as identified in Table 5.

Table 5: Direct adverse effects on residential communities and shared open areas that are considered significant on a community basis

Significant effect number (see Map series SV-05)	Source of significant effect	Time of day	Location and details
OSV18-C01	Airborne noise increase from new train services	Daytime / night-time	Stoneleigh: approximately five properties in the vicinity of Eastgate closest to the Proposed Scheme. Forecast increases in sound from the railway are likely to cause a moderate adverse effect on the acoustic character of the area around

⁴ Defined as the equivalent continuous sound level from 23:00 to 07:00 or $L_{pAeq,night}$

⁵ With the train flows described in the assumptions section of this CFA Report, the daytime sound level (defined as the equivalent continuous sound level from 07:00 to 23:00 or $L_{pAeq,day}$) from the Proposed Scheme would be approximately 10dB higher than the night-time sound level. The 40dB contour therefore indicates the distance from the Proposed Scheme at which the daytime sound level would be 50dB.

⁶ Further information is contained in Volume 1.

Significant effect number (see Map series SV-05)	Source of significant effect	Time of day	Location and details
			these properties. There are no shared open spaces identified as being affected in this community area.
OSV18-C02	Airborne noise increase from new train services	Daytime / night-time	Burton Green: approximately 35 dwellings in the vicinity of Cromwell Lane and Red Lane closest to the Proposed Scheme. Forecast increases in sound from the railway are likely to cause a moderate adverse effect on the acoustic character of the area around the closest properties. The effect on the acoustic character of residential areas that are located further from the railway would be minor. There are no shared open spaces identified as being affected in this community area.
OSV18-C03/OSV23-C01 ⁷	Airborne noise increase from new train services	Daytime / night-time	Beechwood ⁷ : approximately 50 dwellings in the vicinity of Waste Lane, Old Waste Lane and Hodgett's Lane closest to the Proposed Scheme and their shared external community spaces. Forecast increases in sound from the railway are likely to cause a moderate adverse effect on the acoustic character of the area around the closest properties, reducing to a minor effect at those further from the Proposed Scheme.

Residential receptors: indirect effects

- 4.4.8 The transport assessment presented in Volume 5: Appendix TR-001-000, has been used to identify those roads or railways within this study area where the alignment remains as at present, but a change in flow or composition is identified which is greater than the screening criteria defined in Volume 5: Appendix SV-001-000. No roads or railways which exceed the criteria defined in Volume 5: Appendix SV-001-000 have been identified in this study area.
- 4.4.9 The assessment of operational noise and vibration indicates that significant indirect effects on residential receptors are unlikely to occur in this area.

Non-residential receptors: direct effects

- 4.4.10 The assessment of operational noise and vibration indicates that significant effects are likely on the non-residential receptors identified in Table 6.
- 4.4.11 The assessment of effects on non-residential receptors has been undertaken on a reasonable worst case basis taking account of public available information about each receptor. Further information can be found in Volume 5: Appendix SV-004-024.

Table 6: Likely significant noise or vibration effects on non-residential receptors arising from operation of the Proposed Scheme

⁷ Effects on properties in Beechwood are also described in Volume 2: CFA report number 23 as the community area described herein straddles the CFA boundary.

Significant effect number (see Map series SV-05, Table 1 and 3)	Type of significant effect and source	Time of day	Location and details ³¹
OSV18-No1	Potential noise disturbance of activities within the centre due to the operation of train services.	Daytime	National Agriculture Centre

National Agriculture Centre

- 4.4.12 The National Agriculture Centre includes a number of buildings and uses. Moderate and major impacts have been identified at this receptor based upon the change in the airborne noise level outside this receptor. An assessment has been undertaken to determine if this impact would result in a likely significant effect at this non-residential receptor, using the significance criteria detailed in Volume 5: Appendix 001-000.
- 4.4.13 This receptor is located in close proximity to the Proposed Scheme. The building is relatively contemporary in design and is occupied by the Royal Agricultural Society of England. Ventilation is considered to be provided by opening of windows.
- 4.4.14 The National Agriculture Centre are identified, on a precautionary basis, as being subject to a significant adverse effect denoted by OSV18-No1 in Table 3 and drawing SV-02 (see CFA18 Volume 5 sound, noise and vibration map book).

Little Beanit Farm

- 4.4.15 A major operational noise impact has been identified based upon the change in the airborne noise level outside this receptor, reference 202851. An assessment has been undertaken to determine if this impact would result in a likely significant effect at this non-residential receptor, using the significance criteria detailed in Volume 5: Appendix 001-000.
- 4.4.16 The residential area of the farm has been considered within the residential assessment. The commercial area of this receptor is made up of farm / industrial buildings whose operation is not considered to be noise sensitive, and therefore the non-residential part of Little Beanit Farm is not identified as being subject to a significant observed adverse noise effect.

The Dalehouse

- 4.4.17 A major operational noise impact has been identified based upon the change in the airborne noise level outside this receptor, reference 226073. An assessment has been undertaken to determine if this impact would result in a likely significant effect at this non-residential receptor, using the significance criteria detailed in Volume 5: Appendix 001-000.

- 4.4.18 The residential area of the farm has been considered within the residential assessment. The commercial area of this receptor is made up of farm / industrial buildings whose operation is not considered to be noise sensitive, and therefore the non-residential part of The Dalehouse is not identified as being subject to a significant observed adverse noise effect.

Non-residential receptors: indirect effects

- 4.4.19 The transport assessment presented in Volume 5: Appendix TR-001-000, has been used to identify those roads or railways within this study area where the alignment remains as at present, but a change in flow or composition is identified which is greater than the screening criteria defined in Volume 5: Appendix SV-001-000. No roads or railways which exceed the criteria defined in Volume 5: Appendix SV-001-000 have been identified in this study area.
- 4.4.20 The assessment of operational noise and vibration indicates that significant indirect effects are unlikely to occur on non-residential receptors in this area.

Cumulative effects

- 4.4.21 Details of properties being currently developed which were afforded planning approval before the safeguarding date are presented in Volume 5: Appendix CToo4-000. Within this area, the operational sound, noise or vibration associated with these developments in conjunction with the operation of the Proposed Scheme do not result in any significant cumulative effects.